

## SERVICE BULLETINS

Please check GSPN for parts update!

Version	Parts No	Short Description
ALL	BN44-00330A	SMPS
ALL	BN94-03252Q	Main PCB
ALL	BN96-12391A	Buffer Y
ALL	BN96-12950A	X Main
ALL	BN96-12951A	Buffer X
ALL	BN96-12954A	Buffer E
ALL	BN96-12955A	Buffer F
ALL	BN96-13389C	Function & IR PCB
ALL	BN96-15414A	Logic Main PCB
ALL	BN96-15415A	Y Main
ALL	BN96-15494D	3D Emitter
ALL	BN96-15403A	Panel
ALL	BN96-12981N	Front Cover
ALL	BN96-13133A	Stand Base
ALL	BN96-13896G	Rear Cover
ALL	BN96-15507A	Stand Guide
ALL	3903-000552	Power Cord
ALL	BN40-00163A	Tuner
ALL	BN59-01109A	Remote
ALL	BN96-12469Z	LVDS Cable
ALL	BN96-12832C	Speaker

## FIRMWARE

Please check [Samsung.com](http://Samsung.com) for latest update!

10/17/2010, Ver. 1002.0

No sound from SPDIF on PC-DTV PIP.

9/2/2010, Ver. 1001.0.2

Volume going up and down intermittently.

Buffer Y

Vs Va Vsc Ve  
Voltages

SMPS

X Main

Y Main

Logic PCB

Buffer X

Main PCB

Buffer E

Buffer F

**HELP** : 1-888-751-4086 (Tech Support)  
1-866-894-0637 (FE)

GSPN

<http://gspn3.samsungcsportal.com>

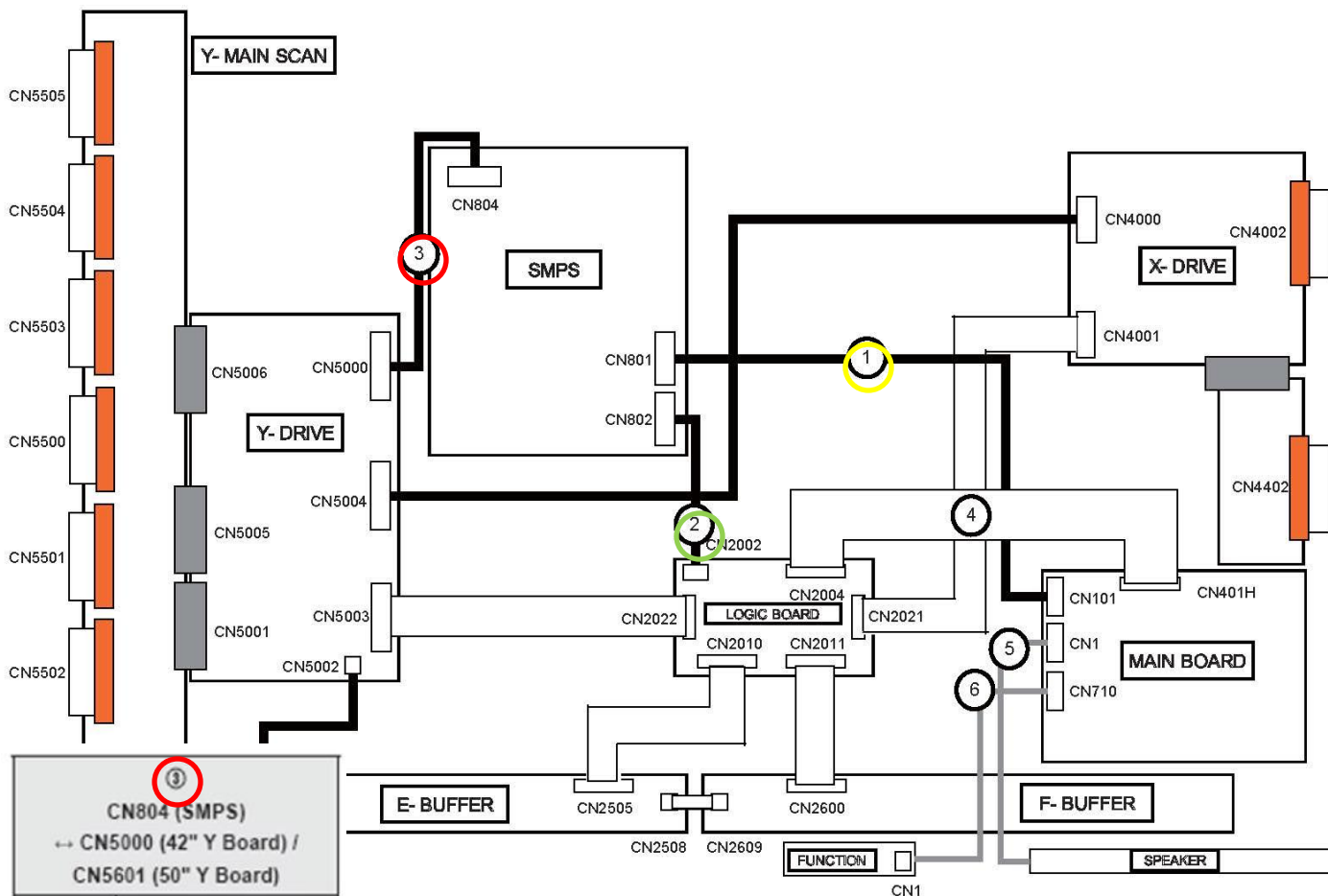
PLUS ONE

<http://my.plus1solutions.net/clientPortals/samsung>

## HOT TIPS

-Power On Problems: (pg. 3)

-Video Problems: (pg. 4)



①  
CN801 (SMPS)  
↔ CN101 (Main Board)

Pin No.	Signal
1	PS_ON
2	STBY
3	GND_15Vamp
4	15Vamp
5	GND_5.3V
6	GND_5.3V
7	5.3V
8	5.3V
9	GND_15V
10	15V
11	15V
12	5.3V

②  
CN802 (SMPS)  
↔ CN2002 (Logic Board)

Pin No.	Signal
1	D5.3V
2	D5.3V
3	GND
4	GND
5	PS_ON
6	VS_ON

③  
CN804 (SMPS)  
↔ CN5000 (42" Y Board) /  
CN5601 (50" Y Board)

Pin No.	Signal
1	Vs
2	Vs
3	GND
4	Vg
5	GND
6	Va

### Power On Sequence

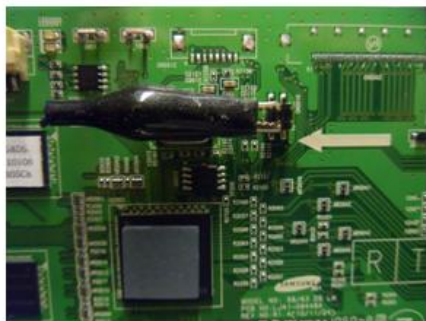
- STBY 5V (Pin 2 CN801)
- PS\_ON (approx 3.3V – 0V) (Pin 1 CN801)
- VS\_ON (approx 0V – 3.3V) (Pin 6 CN802)

# Fast Track Troubleshooting Manual

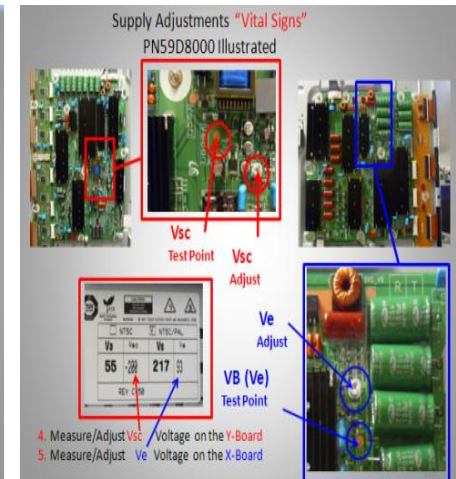
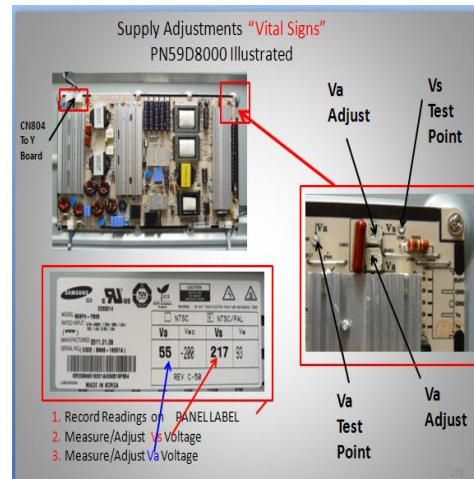
## “Troubleshooting”

### Activating Power & Logic Board Test Patterns without Main Board:

1. Remove Power Cord to Panel
2. Short Highest 2 Pin #s on Logic Board Test Jig (Can be 4 Pin or 6 Pin)



3. Remove Power Connector at Main Board (keeping connection to SMPS)
4. Short “Power On” Pin to Circuit Ground on Power Connector to SMPS.
5. Connect Power Cord to Panel



## SAMPLE VIEW & READINGS

### “VITAL SIGNS”

When troubleshooting, It's very important to first check **Vs, Va, Vsc & Ve**. If **Vs** is missing (0V), disconnect power and check for short. Use ohm meter to measure resistance while disconnecting Y-Board & X-Board supply feeds one at a time.

Turn Power On and Test SMPS with short connector removed for correct Vs voltage verification. (It may only come up briefly but to full level). Again be careful not to reconnect Power Connectors until Vs falls below 10V.

If **Va** is low or missing, disconnect Supply Feed to Address Boards and Check to see if SMPS Supply is restored. (Note Va feed normally passes through the Y-Drive to the Address Boards (Logic Buffer Boards)).

If **Vsc** is low or missing and Vs was OK, the failure is with the **Y-Board** since the Y-Board generate the Vsc voltage from the Vs supplied by the SMPS.

If **Ve** is low or missing and Vs is OK, the failure is with the **X-Board** since the Ve is generated by the X-Board from the Vs supplied by the SMPS. Please note in some rare cases the Ve may be generated by the Y-Board feed to the X-Board.)

### Other SMPS Voltages:

Check Low Voltage feeds to the Main Board and other supplied Assemblies.

## Power Supply Trouble Shooting Notes:

### 2010/2011 models

Will not be run with the “X” or “Y” main disconnected. The SMPS will shut down immediately. However if a meter is first connected to the test point when power is applied it will read the correct voltage briefly before shutting down. (You have enough time to check key voltages)

**CAUTION:** Do not reconnect any connectors to SMPS or Y/X Boards until power has been turned off long enough for Vs to drop below 10V or damage will occur to X or Y Boards.

### Over Current Protection

For the SMPS Power Supply... If a short circuit occurs on either the VS or VA voltage lines, the SMPS stops operating, but should not fail. When the short circuit is removed from the source line, the Power Supply will operate normally again. **Many SMPS Supplies are replaced needlessly!**

## TROUBLESHOOTING VIDEO PROBLEMS

### 1. Verify Video Operation

- Customer Picture Test** (if available)
- "Display"** (If display is OK source is suspected)
- Substitute with known good Source  
(**external DVD or Signal Generator**)

### 2. Using Test Patterns in Service Mode

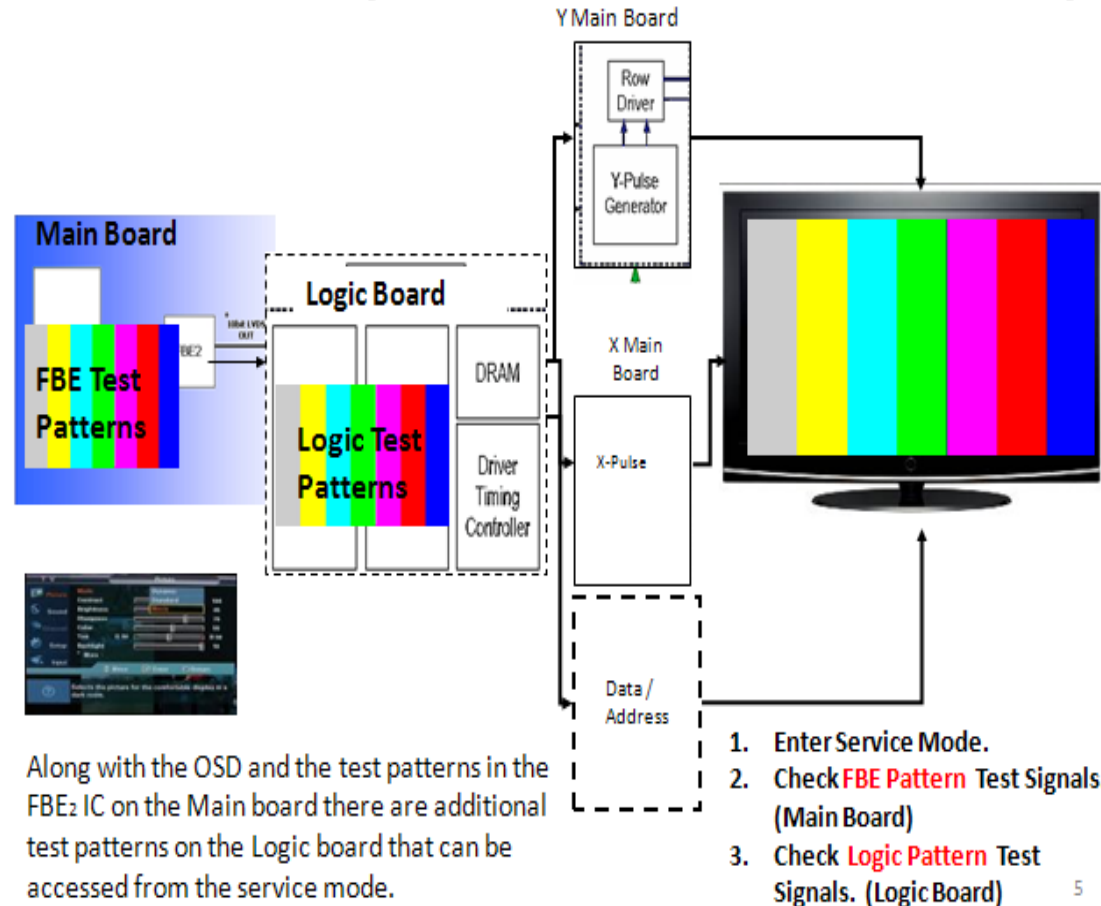
#### - ENTERING SERVICE MODE -

- | Customer Remote     | Service Remote   |
|---------------------|------------------|
| 1. Power off        | 1. Power On      |
| 2. Mute, 182, Power | 2. Info, Factory |

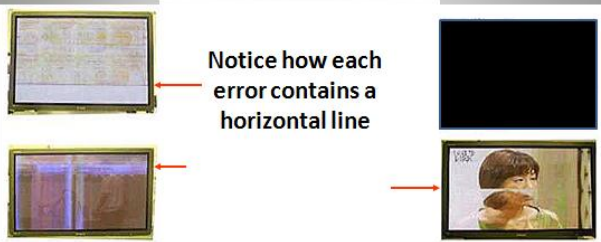
### 3. Determine cause

- If Logic pattern is NG; Logic board, Logic buffers or Panel are suspect.
- If FBE patterns is NG and Logic is OK; Main or LVDS cable are suspect.
- If both are OK it is likely a source issue.

## 2010 PDP Signal Path for Troubleshooting



## "Y" Board Failure Examples



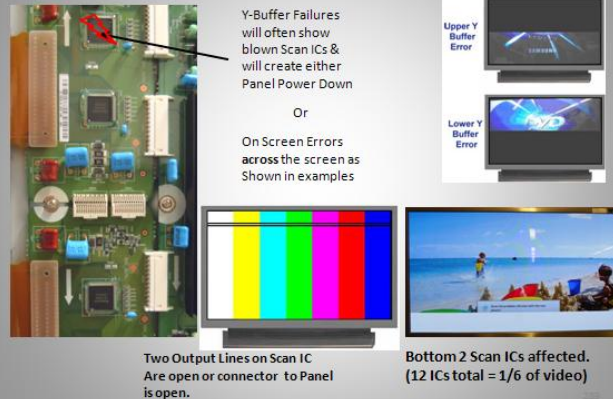
Notice how each error contains a horizontal line

These examples show Y board errors, because the Y electrodes run horizontally, errors can often be seen across the screen.

2010 & 2011 Y board errors will be detected by the Logic Board and often create a High Voltage Power Down ("VS ON" to Off) condition.

When failure exists on either the Y-Board or the Y-Buffer Boards, be sure to replace both assemblies. A failure on either Board can create a failure on both assemblies.

## Y Buffer Boards Failures



Y-Buffer Failures will often show blown Scan ICs & will create either Panel Power Down

Or

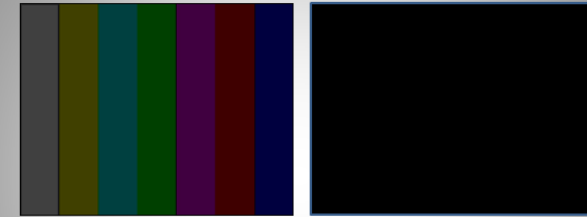
On Screen Errors across the screen as Shown in examples



Two Output Lines on Scan IC Are open or connector to Panel is open.

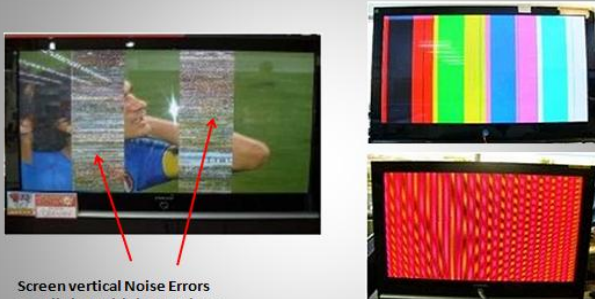
Bottom 2 Scan ICs affected. (12 ICs total = 1/6 of video)

## "X" board Failure Examples



- In this left screen example, the sustain signal from the X board is low or missing.
- For 2009 Models and Older: Verify operation of the X board by disconnecting the power supply cable to the X board. If the other boards are working the picture will be dark.
- If the X-Board Power or Y-Board Power is removed, however, on 2010 or 2011 Models, an error will be detected and the VS Supply from the SMPS will be turned off by the Logic Board. A Black Screen (on right) will occur.

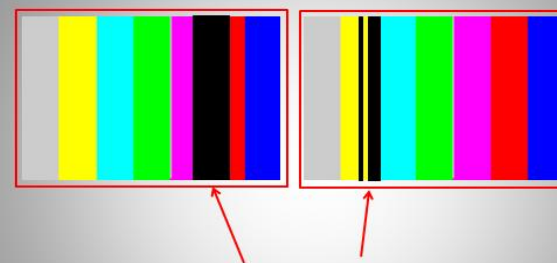
## Logic Board Failure Examples



Screen vertical Noise Errors usually in Multiple Locations

The examples show the panel illuminated but displays with incorrect noisy video.

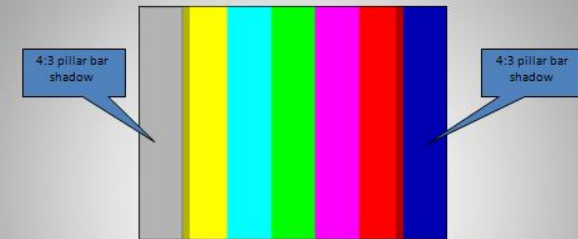
## Logic Buffer Board Failure Examples



Normal Video Screen with added Vertical Black, Red, Green, or Blue Bar Errors

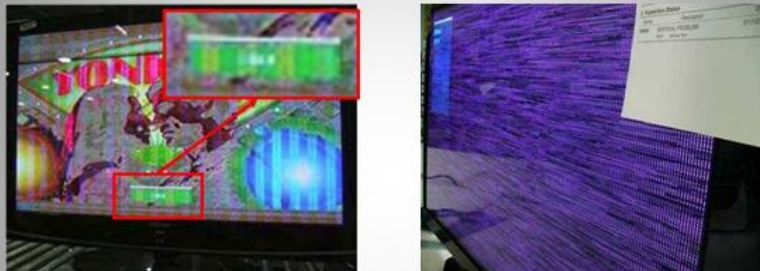
The examples show the panel illuminated, display is Normal except for area of Logic Buffer Board Failure.

## "X" board Failure Examples



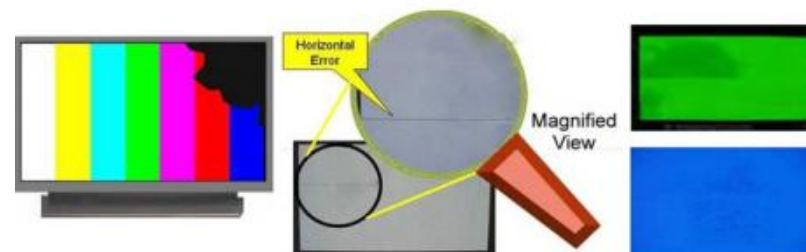
- In this example the **Ve** initialize signal is low or missing creating image retention. No Erasing.
- Troubleshoot the X Board by verifying that the **Ve** Voltage is correct with the label on the Panel.

## Main Board Failure Symptoms



- Main Board errors are similar to logic errors but the problem can be on a single source such as the tuner.
- If the Menu also shows the defect the main board is suspected

## PDP Panel Troubleshooting



Plasma Panel Failure Examples

- Plasma Panel failure can usually be identified by observation. Single sub pixel columns or rows that are black or white always are panel failures. Other lines or lines that vary with content are almost never panel failures. Individual pixel errors are almost always panel related.

## ALIGNMENTS:

1. Check/Adj. VS, VA, VE, & VSC according to Panel Label and Diffusion test. (see bulletins for any special notes before making changes)

## 2. Check/Set Option Bytes:

### - ENTER SERVICE MODE -

Customer Remote

1. Power off
2. Mute, 182, Power

Service Remote

1. Power On
2. Info, Factory

Model Name			PN50C490B3D PL50C490B3
1	Type	58FamV1D ~ 50FARn4	50HHcD4
2	Local set	...	...
3	Model	UC7000 ~ PC560	PC490
4	Tuner	Auto,SEMCO	SEMCO
5	DDR	SAMSUNG/ETRON	ETRON
6	Light Effect	ON/OFF	OFF
7	Ch Table	NONE,SUWON,SAMEX	NONE
8	Country	USA ~ PHILIPPINES	USA
9	Front Color	W-Milky ~ S-C-BLK	S-C-BLK

### DIFFUSION TEST/ADJ. (cell miss-firing, older units)

- Allow the unit to warm up 15 to 20 minutes
- Access the Burn Protect Sig. Pattern in Cust. Menu.
- Adjust the Vs volts until screen errors are gone in both dark and bright areas.
- Adjust the Vs volts within +/- 10V on the panel label.

